

THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims

We claim:

1. - 15. (Canceled)

16. (Previously Presented) An apparatus for classifying interference in a mobile communications terminal comprising:

an electronic circuit configured to receive a wireless communications signal carrying signal channels with transmitted information, the electronic circuit comprising signal processing units adapted to provide at least one of: a signal representing gain from an automatic gain control (AGC signal), a transmission power control command signal (TPC command signal), and a signal representing strength of the wireless communications signal; and

an interference classifier adapted to classify a type of interference affecting communications quality by evaluating time-domain behavior of at least one of the AGC signal, the TPC command signal, and the signal representing the strength of the wireless communications signal; and wherein the type of interference is classified in one of at least two predetermined classes of interference, wherein a first class of interference includes inter-cell interference, and a second class of interference includes intra-cell interference, and the interference classifier is adapted to identify and discriminate between inter-cell interference and intra-cell interference.

17. – 18. (Canceled)

19. (Previously Presented) The apparatus of claim 16, further comprising filter means for processing the wireless communication signal via a set of filter coefficients selected dependent upon of a classified type of interference.

20. (Previously Presented) The apparatus of claim 19, wherein:
the filter means comprises a low-pass filter; and
the low-pass filter has a relatively wide band-width when interference is classified to be intra-cell interference and a relatively narrow band-width when interference is classified to be inter-cell interference.

21. (Previously Presented) In a mobile communications terminal adapted for use in a cellular communications system, a method of classifying interference, comprising the steps of:

receiving a wireless communications signal carrying signal channels;
extracting the signal channels;
providing at least one of:
a signal representing gain from an automatic gain control (AGC signal);
a transmission-power-control command signal (TPC command signal);

and

a signal representing a strength of the wireless communications signal;
classifying a type of interference affecting communications quality by evaluating a time-domain behavior of at least one of the AGC signal, the TPC command signal, the signal representing the strength of the wireless communications signal; and
wherein the type of interference is classified in one of at least two predetermined classes of interference, wherein a first class of interference includes inter-cell interference, and a second class of interference includes intra-cell interference, and the interference classifier adapted to identify and discriminate between inter-cell interference and intra-cell interference.

22. – 23. (Canceled)

24. (Previously Presented) The method of claim 21, further comprising:
filtering the wireless communications signal with a low-pass filter; and
wherein the filter has a relatively high band-width when interference is classified
to be intra-cell interference and has a relatively low band-width when interference is
classified inter-cell interference.

25. (Canceled)

26. (Previously Presented) An apparatus for classifying interference in a
mobile communications terminal comprising:

an electronic circuit configured to receive a wireless communications signal
carrying signal channels with transmitted information, the electronic circuit comprising
signal processing units adapted to provide at least one signal for at least one of
adjusting, verifying, and demodulating the wireless communication signal;

an interference classifier adapted to receive the at least one signal and to classify
a type of interference affecting communications quality by evaluating the time-domain
behavior of the at least one signal, wherein the at least one signal is selected from the
group consisting of: a signal representing gain from an automatic gain control (AGC
signal), a transmission power control command signal (TPC command signal), and a
signal representing strength of the wireless communications signal[: and]] wherein the
type of interference is classified in one of at least two predetermined classes of
interference, and the interference classifier is adapted to identify and discriminate
between intra-cell interference and inter-cell interference.

27. (Canceled)

28. (Previously Presented) In an apparatus to classify interference in a mobile communications terminal adapted for use in a cellular communications system, a method comprising the steps of:

receiving a wireless communications signal carrying signal channels;

extracting the signal channels;

providing at least one signal for at least one of adjusting, verifying, and demodulating the wireless communication signal, wherein the at least one signal comprises one selected from the group consisting of a signal representing gain from an automatic gain control (AGC signal), a transmission-power-control command signal (TPC command signal), and a signal representing a strength of the wireless communications signal;

classifying a type of interference affecting communications quality by evaluating a time-domain behavior of the at least one signal wherein the type of interference is classified in one of at least two predetermined classes of interference; and

identifying and discriminating between intra-cell interference and inter-cell interference.

29. (Previously Presented) The apparatus of Claim 16, further comprising the interference classifier coupled to the electronic circuit wherein the interference classifier is adapted to output pre-determined binary signals corresponding to INTRA and INTER, the state of the pre-determined binary signals operable to select a different interference reduction algorithm depending on the type of interference.

30. (Previously Presented) The method of claim 29, wherein a first pre-determined binary signal corresponds to INTER in the event of inter-cell interference and a second pre-determined binary signal corresponds to INTRA in the event of intra-cell interference.

31. (Previously Presented) The apparatus of claim 29, further comprising a filter means for processing the wireless communication signal via a set of filter coefficients selected dependent upon the predetermined binary signal outputted.

32. (Previously Presented) The apparatus of claim 31, wherein:

the filter means comprises a low-pass filter having a relatively wide band-width when the predetermined binary signal corresponds to INTRA and a relatively narrow band-width when the predetermined binary signal corresponds to INTER.

33. (Canceled)

34. (Previously Presented) An apparatus to classify interference in a mobile communications terminal comprising:

an electronic circuit configured to receive a wireless communications signal carrying signal channels with transmitted information, the electronic circuit further comprising signal processing units adapted to provide a signal representing gain from an automatic gain control (AGC signal); and

an interference classifier coupled to the electronic circuit adapted to classify a type of interference affecting communications quality, wherein the type of interference is classified in one of at least two predetermined classes of interference by evaluating the time-domain behavior of the AGC signal, the interference classifier adapted to identify and discriminate between intra-cell interference and inter-cell interference.

35. (Previously Presented) An apparatus to classify interference in a mobile communications terminal comprising:

an electronic circuit configured to receive a wireless communications signal carrying signal channels with transmitted information, the electronic circuit further comprising signal processing units adapted to provide a signal representing gain from a transmission power control command signal (TPC command signal); and

an interference classifier coupled to the electronic circuit adapted to classify a type of interference affecting communications quality, wherein the type of interference is classified in one of at least two predetermined classes of interference by evaluating the time-domain behavior of the TPC command signal, the interference classifier adapted to identify and discriminate between intra-cell interference and inter-cell interference.

36. (Previously Presented) An apparatus to classify interference in a mobile communications terminal comprising:

an electronic circuit configured to receive a wireless communications signal carrying signal channels with transmitted information, the electronic circuit comprising signal processing units adapted to provide a signal representing a signal representing strength of the wireless communications signal;

an interference classifier coupled to the electronic circuit adapted to classify a type of interference affecting communications quality

wherein the type of interference is classified in one of at least two predetermined classes of interference, and the interference classifier adapted to classify a type of interference affecting communications quality by evaluating the time-domain behavior of the signal representing strength of the wireless communications signal, the interference classifier adapted to identify and discriminate between intra-cell interference and inter-cell interference.

37. (Previously Presented) An apparatus to classify interference in a mobile communications terminal comprising:

an electronic circuit configured to receive a wireless communications signal carrying signal channels with transmitted information;

an interference classifier coupled to the electronic circuit adapted to classify a type of interference affecting communications quality wherein the type of interference is classified in one of at least two predetermined classes of interference, wherein a first class of interference includes inter-cell interference; and a second class of interference includes intra-cell interference, the interference classifier adapted to identify and discriminate between intra-cell interference and inter-cell interference.

38. (Previously Presented) An apparatus to classify interference in a mobile communications terminal comprising:

an electronic circuit configured to receive a wireless communications signal carrying signal channels with transmitted information;

an interference classifier coupled to the electronic circuit adapted to classify a type of interference affecting communications quality, wherein the type of interference is classified in one of at least two predetermined classes of interference, the interference classifier adapted to identify and discriminate between intra-cell interference and inter-cell interference; and

means for processing the communication signal in a first of at least two ways, wherein the first way is selected dependent upon a classified type interference.

39. (Previously Presented) An apparatus to classify interference in a mobile communications terminal comprising:

an electronic circuit configured to receive a wireless communications signal carrying signal channels with transmitted information;

an interference classifier coupled to the electronic circuit adapted to classify a type of interference affecting communications quality, wherein the type of interference is classified in one of at least two predetermined classes of interference, the interference classifier adapted to identify and discriminate between intra-cell interference and inter-cell interference; and

a filter means for processing the wireless communication signal via a set of filter coefficients selected dependent upon a classified type of interference.

40. (Previously Presented) The apparatus of claim 39, wherein:

the filter means comprises a low-pass filter; and

the low-pass filter has a relatively wide band-width when interference is classified to be intra-cell interference and a relatively narrow band-width when interference is classified to be inter-cell interference.